

Plant and Equipment Expenditures by Foreign Affiliates of U.S. Corporations, 1971-73

THE rate of growth of plant and equipment expenditures by U.S.-owned foreign affiliates is expected to dip significantly this year but will speed up slightly in 1973. The most recent survey of affiliates' spending plans indicates outlays are expected to rise only 4 percent this year following an increase of 14 percent in 1971. First estimates for 1973 indicate an expenditure increase of 6 percent. For the 3 years 1971-73, petroleum industry affiliates show high rates of expansion each year while expenditures by manufacturing affiliates display very little growth.¹

Final figures for 1971 spending were significantly higher than had been indicated in the previous semiannual survey. That survey was conducted at the end of last year after most expenditures had been completed, so that the revision of the 1971 figure primarily reflects more and better information available to reporters. Also, several large reporters do not report spending projections but file only yearend final figures. Expenditures of such reporters are assumed to expand at the same rate as reported projections of other reporters, but in 1971 their rate of expansion was faster and this was not reflected in the 1971 data until the most recent report was filed. The current estimate of 1972 spending, in dollars,

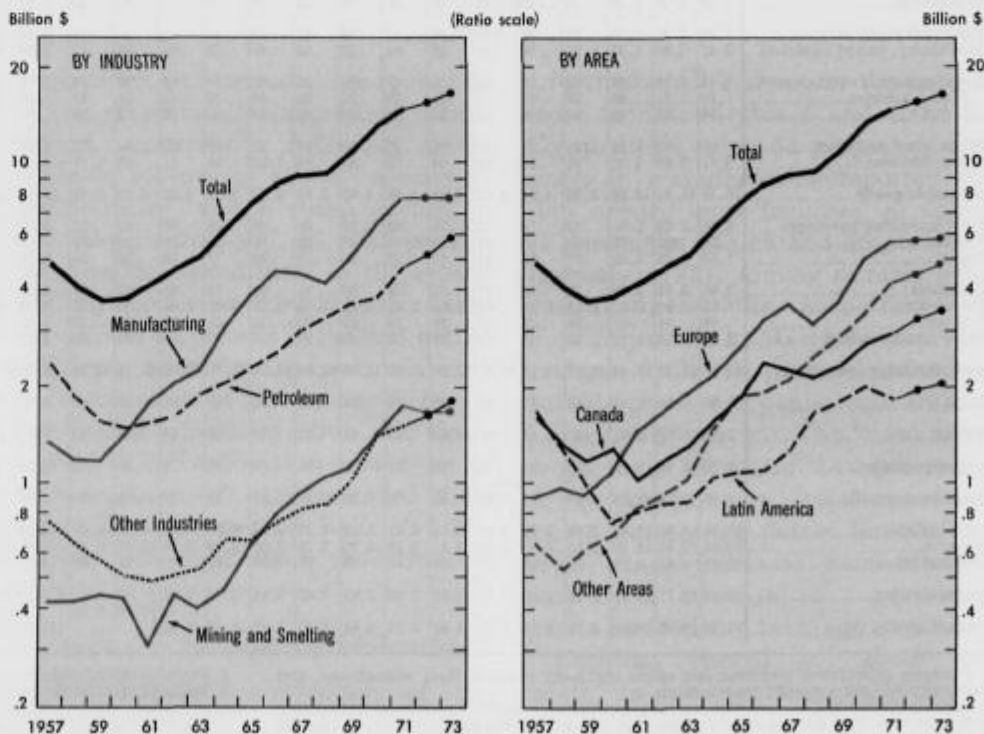
is \$15.4 billion, up slightly from the previous projection. However, because of the upward revision of the 1971 figure, the current estimate of the increase in affiliate spending this year, 4 percent, is down from the 7-percent increase projected 6 months earlier.

An attempt was made in the latest survey, as in the previous one (see March 1972 issue of the *Survey*), to assess the effects on affiliate spending of the various economic policy measures

instituted beginning in August 1971. Of the 325 parent company responses to the special questionnaire, 305 indicated that these measures had no identifiable direct effect on their affiliates' capital expenditures. The remaining 20 companies reported a mixture of effects, in some cases lowering and in other cases raising planned expenditures. In sum, it appears that other factors such as anticipated demand, profitability, and availability of financing have

CHART 10

Expenditures for Plant and Equipment by Foreign Affiliates of U.S. Companies



* Expected, see note table 1.

U.S. Department of Commerce, Bureau of Economic Analysis

NOTE.—Data for this article were prepared under the supervision of Howard Murad.

1. These findings are the result of BEA's latest semiannual survey, taken in June 1972, covering about 450 U.S. direct investors and their 4,800 affiliates. The data are universe estimates, derived from reported sample data, for gross property, plant, and equipment expenditures by all directly held affiliates in which the U.S. equity interest is 25 percent or more.

played the more identifiable role in investment decisions, with no clear impact as yet from the devaluation of the dollar and incentives to domestic expansion instituted since last August.

Nevertheless, the relative growth of domestic and foreign plant and equipment expenditures appears to have changed dramatically from 1971 to 1972. Last year, foreign spending increased 14 percent while a 2-percent increase was recorded in the United States. This year, the 4-percent rise scheduled abroad is well below the most recent estimate of a 10-percent increase in the United States (see report on p. 14). If 1972 expectations are realized both at home and abroad, this will be the first year since 1968 in which domestic spending will have grown faster than spending by affiliates abroad.

The faster growth in domestic expenditures is probably a result of the United States being further ahead in the business recovery cycle than most other developed countries. As an indication of this, expenditures by affiliates operating in the Canadian economy, which is tied closely to that of the United States, are expected to rise 9 percent this year, about the same rate of increase as in the United States. Spending in 1972 in all other developed areas taken together is expected to remain at approximately the 1971 level, while in developing areas an 8 percent rise in outlays is projected.

The 6 percent rise in affiliate spending planned for 1973 is concentrated by area in the developing countries and by industry in petroleum. The high level of unused manufacturing capacity, particularly in Western Europe, sug-

gests that increases in these expenditures in developed areas may lag behind the economic recovery abroad.

Industry and area patterns

The projected growth in spending abroad in 1972 and 1973 is centered in substantial expansion by affiliates in the petroleum industry. Following a record 25 percent increase in 1971 which boosted outlays to \$4.7 billion, plant and equipment expenditures of petroleum affiliates are expected to rise 10 percent this year and 13 percent in 1973. The substantial growth in spending is primarily related to the need to extract, refine, transport, and market an increasing volume of petroleum products in response to the world's soaring energy requirements.

Continuing negotiations on pricing and local participation, as well as the

Table 1.—Estimates of Plant and Equipment Expenditures by Foreign Affiliates of U.S. Corporations, Actual and Projected, by Percent Change and Amount

	Percent change								Billions of dollars								
	Actual				Current projections for: 1		Prior projections for: 1		Actual				Current projections for: 1		Prior projections for: 1		
	1969	1969	1970*	1971	1972	1973	1971	1972	1967	1968	1969	1970*	1971	1972	1973	1971	1972
Total.....	1	16	21	14	4	6	0	7	9.3	9.4	10.3	12.6	14.8	15.4	16.3	14.2	15.2
By industry																	
Mining and smelting.....	12	9	22	26	-4	2	31	2	1.0	1.0	1.1	1.4	1.7	1.7	1.7	1.7	1.7
Petroleum.....	10	10	6	25	10	13	23	3	3.0	3.3	3.6	3.8	4.7	5.2	5.9	4.7	5.1
Manufacturing.....	-7	19	31	6	2	0	-1	7	4.6	4.2	5.0	5.5	6.8	6.0	6.0	6.4	6.3
Chemicals.....	0	-9	14	14	-4	-5	4	0	1.2	1.2	1.1	1.3	1.5	1.4	1.5	1.3	1.3
Machinery.....	-7	33	43	8	9	3	-2	9	1.1	1.0	1.3	1.9	2.0	2.3	2.3	1.8	2.0
Transportation equipment.....	-22	29	23	-15	11	-4	-10	2	.8	.6	.8	1.1	.9	1.0	1.0	.9	.9
Other manufacturing.....	-6	27	31	0	-4	1	4	10	1.4	1.3	1.7	2.2	2.4	2.3	2.3	2.3	2.0
Other industries.....	2	23	26	11	7	11	6	12	.8	.8	1.0	1.4	1.5	1.0	1.8	1.4	1.0
By area																	
Canada.....	-6	10	17	8	9	7	9	18	2.3	2.1	2.3	2.7	2.0	2.2	2.5	2.0	2.2
Latin American Republics and other Western Hemisphere.....	20	12	5	-6	6	6	-12	-3	1.3	1.3	1.8	2.0	1.3	1.0	2.0	1.7	1.7
Europe.....	-14	20	33	10	0	2	7	7	3.4	3.1	3.7	5.0	5.7	4.5	5.9	5.4	5.7
United Kingdom.....	-6	27	22	9	-14	5	4	7	1.0	.9	1.2	1.4	1.5	1.3	1.4	1.5	1.6
European Economic Community.....	-18	20	42	18	4	0	8	0	2.1	1.7	2.1	2.0	3.4	3.0	3.0	3.2	2.3
Other.....	-4	4	15	19	15	2	11	10	.5	.5	.6	.7	.8	.9	.9	.7	.8
Australia, New Zealand, and South Africa.....	4	16	32	26	6	-10	20	-5	.7	.7	.8	1.0	1.3	1.3	1.2	1.2	1.2
Japan.....	29	6	39	40	-8	25	16	18	.8	.4	.5	.5	.9	.8	1.0	.7	.8
Other areas.....	28	30	4	21	10	16	20	17	1.1	1.4	1.6	1.7	2.1	2.3	2.7	2.2	2.6
By OPDI schedule																	
All schedules.....	3	16	21	15	3	5	9	7	7.0	7.2	8.4	10.3	11.8	12.2	12.6	11.2	12.0
Schedule A.....	24	17	5	11	1	12	19	1	2.0	2.4	2.9	3.2	2.4	3.5	3.9	3.5	3.5
Schedule B.....	-5	14	24	17	3	6	5	14	2.4	2.6	2.9	3.5	4.2	4.4	4.5	3.8	4.4
Schedule C.....	-16	13	34	17	4	0	10	0	2.7	2.2	2.6	2.6	4.1	4.3	4.4	3.5	4.0

* Revised.

1. Based on results of the survey taken in June 1972.

2. Based on results of the survey taken in December 1971, as published in March 1972; no adjustments have been made to reflect information received subsequent to the publication.

3. Does not include Canada.

NOTE.—Spending projections are adjusted in order to eliminate—or at least reduce—any systematic bias in response to the four surveys of estimated expenditures taken for each year (in June and December of the preceding year and June and December of the year in question, i.e., A, B, C, and D reports) before the final figures are available (the E report). The 1973

projection is based on the third estimate (C report) of spending for the year. The 1972 projection is based on the first estimate (A report) of spending for the year. For 1973 C and 1972 A, separately, the projections were derived by calculating ratios of actual spending (the final E estimate) to the reported expectation for each of the previous 4 years. No bias adjustment was made unless there was a deviation in the same direction in at least 3 of the 4 years. Also, no adjustment was made to items below \$10 million. When adjustment was necessary under these criteria, the median ratio of actual to expected spending in the 4-year period was applied as an adjustment factor. (For further discussion, see the Note on Methodology on page 31 of the September 1971 Survey.)

recent nationalization of two important, largely European-owned companies, have affected the investment climate in some petroleum producing areas and may be shifting the geographic focus of petroleum expansion. Expenditures

by petroleum affiliates in Africa (excluding the Republic of South Africa), after reaching a peak of \$560 million in 1969, have declined steadily and 1973 outlays are expected to be only \$225 million. The decline in Africa is

centered in Libya. In Venezuela, too, expenditures are expected to continue to decline through next year. In the rest of Latin America taken together, spending will decrease slightly this year following a 70-percent rise in

Table 2.—Estimates of Plant and Equipment Expenditures by U.S. Corporations' Foreign Manufacturing Affiliates, by Selected Country—Summary of Surveys

(Millions of dollars)

	Actual					Projection ¹			Actual					Projection ¹	
	1967	1968	1969	1970*	1971	1972	1973		1967	1968	1969	1970*	1971	1972	1973
All areas	4,525	4,191	4,974	5,452	5,508	5,935	6,914	Europe—Continued:							
Chemicals	1,210	1,206	1,118	1,279	1,455	1,387	1,524	Italy	180	185	181	271	291	357	341
Machinery	1,068	1,035	1,344	1,912	2,082	2,223	2,294	Chemicals	34	39	20	39	40	50	79
Transportation equipment	795	618	796	1,080	897	1,800	957	Machinery	55	74	90	153	158	231	217
Other manufacturing	1,452	1,349	1,719	2,312	2,410	2,389	2,537	Transportation equipment	3	2	4	5	10	15	25
Canada	1,001	834	1,036	1,169	1,234	1,273	1,289	Other manufacturing	45	69	57	74	80	60	49
Chemicals	166	166	169	186	169	275	247	Netherlands	106	147	203	228	245	200	201
Machinery	160	144	222	312	343	262	229	Chemicals	137	185	141	185	147	64	67
Transportation equipment	234	194	311	289	144	286	161	Machinery	38	28	35	58	51	61	59
Other manufacturing	411	368	434	474	527	578	578	Transportation equipment	2	1	1	2	4	3	3
Latin American Republics and other Western Hemisphere	445	574	611	669	669	975	894	Other manufacturing	21	15	28	38	44	57	53
Chemicals	140	179	198	170	171	280	241	Other	251	235	242	230	244	361	339
Machinery	78	85	65	140	170	170	268	Chemicals	33	100	68	85	90	60	66
Transportation equipment	88	90	104	111	91	231	197	Machinery	61	54	78	107	115	105	130
Other manufacturing	128	220	214	248	235	374	256	Transportation equipment	19	12	12	20	11	14	17
Argentina	100	71	65	138	115	68	92	Other manufacturing	98	49	58	120	119	149	125
Chemicals	30	18	14	15	15	12	11	Japan	180	227	244	334	445	418	453
Machinery	18	10	23	45	45	24	35	Chemicals	51	128	106	110	145	94	117
Transportation equipment	34	23	40	49	15	14	28	Machinery	64	55	90	173	235	249	221
Other manufacturing	18	19	18	29	34	18	20	Transportation equipment	2	2	2	3	2	2	2
Brazil	131	188	164	181	231	425	262	Other manufacturing	43	41	68	60	75	72	113
Chemicals	29	66	72	40	40	41	68	Australia, New Zealand, and South Africa	254	233	245	353	587	485	523
Machinery	35	40	40	65	79	68	179	Chemicals	47	80	88	44	33	57	40
Transportation equipment	34	51	39	31	50	181	112	Machinery	29	32	35	51	61	72	63
Other manufacturing	33	25	33	64	62	106	93	Transportation equipment	38	40	30	186	100	97	87
Mexico	133	161	170	204	185	235	264	Other manufacturing	95	121	126	163	189	177	157
Chemicals	40	70	58	81	73	106	112	Australia, and New Zealand	214	244	264	220	310	339	289
Machinery	17	17	22	25	31	35	29	Chemicals	22	67	52	58	25	45	36
Transportation equipment	8	6	14	25	18	28	62	Machinery	23	20	30	42	53	45	45
Other manufacturing	45	29	78	90	64	68	71	Transportation equipment	78	76	80	95	82	84	78
Other	141	134	101	145	135	144	145	Other manufacturing	92	56	161	142	146	141	166
Chemicals	30	22	55	64	42	41	40	South Africa	42	82	42	62	68	64	64
Machinery	8	12	9	12	14	13	10	Chemicals	14	10	7	5	7	9	10
Transportation equipment	13	13	11	5	5	10	7	Machinery	6	6	5	8	8	5	5
Other manufacturing	50	78	66	73	74	50	71	Transportation equipment	10	10	6	7	12	13	17
Europe	2,342	2,912	2,639	3,568	3,802	3,672	5,742	Other manufacturing	13	17	24	40	40	38	32
Chemicals	635	624	489	662	860	702	497	Other Africa	31	15	14	31	40	35	29
Machinery	718	659	581	1,308	1,399	1,445	1,641	Chemicals	2	4	8	8	4	4	4
Transportation equipment	379	283	390	551	643	444	497	Machinery	1	1	2	4	3	3	3
Other manufacturing	594	606	764	1,098	1,304	1,071	1,077	Transportation equipment	1	1	1	1	1	1	1
United Kingdom	843	652	658	1,075	1,082	798	912	Other manufacturing	27	9	9	20	28	29	21
Chemicals	127	111	126	164	192	163	153	Middle East	63	111	73	124	64	65	49
Machinery	141	148	153	233	258	255	217	Chemicals	50	123	53	58	5	10	12
Transportation equipment	124	74	168	185	154	96	119	Machinery	1	1	2	2	2	1	1
Other manufacturing	251	249	394	482	506	322	424	Transportation equipment	11	7	8	74	59	54	37
European Economic Community	1,458	1,195	1,440	2,164	2,457	2,513	3,600	Other manufacturing	148	162	190	151	181	183	222
Chemicals	427	334	286	415	558	459	389	Chemicals	78	47	35	52	60	62	52
Machinery	510	486	621	967	947	1,109	1,214	Machinery	14	8	18	21	19	20	29
Transportation equipment	233	146	210	336	376	345	281	Transportation equipment	8	1	2	1	1	7	12
Other manufacturing	254	249	321	419	478	690	526	Other manufacturing	60	48	75	78	66	104	139
Belgium and Luxembourg	290	122	111	185	239	339	248	India	59	25	47	65	80	89	85
Chemicals	110	79	83	95	101	79	62	Chemicals	28	11	11	28	38	35	33
Machinery	46	42	30	38	40	75	110	Machinery	6	3	5	8	8	7	17
Transportation equipment	23	6	4	7	14	8	17	Transportation equipment	16	12	31	34	34	44	35
Other manufacturing	21	37	48	74	83	66	53	Other	68	77	80	86	102	85	187
France	371	307	238	645	639	630	573	Chemicals	56	34	24	29	31	17	19
Chemicals	30	26	30	35	49	64	59	Machinery	8	5	13	12	11	13	23
Machinery	176	179	192	314	279	318	345	Transportation equipment	5	1	1	1	1	7	12
Transportation equipment	75	32	41	54	73	85	51	Other manufacturing	36	36	45	44	60	63	94
Other manufacturing	70	68	75	110	136	138	115								
Germany	618	424	607	894	1,164	1,057	1,122								
Chemicals	96	64	66	135	212	182	140								
Machinery	184	186	273	480	421	424	470								
Transportation equipment	142	106	189	237	273	222	295								
Other manufacturing	95	68	110	180	248	299	245								

* Revised. 1. See note, table 1. Source: U.S. Department of Commerce, Bureau of Economic Analysis.

1971. Although expenditures by oil affiliates in the Middle East as a whole are expected to double this year and increase an additional 36 percent in 1973, most of the increase will be in Saudi Arabia where a settlement on the amount of local participation was reached earlier this year.

Expenditures for exploration and production in Canada are expected to show sizable increases both this year and next. In Europe, the pace of expansion will slow somewhat in 1973, following recent substantial gains, but offshore discoveries in the North Sea imply strong future growth. The major factors boosting spending by petroleum affiliates in 1973 will be expansion of refining facilities in Japan and heavy new investment in tanker fleets.

Expenditures by manufacturing affiliates are expected to show little change this year or in 1973, following a small increase last year. In 1969 and in 1970, manufacturing affiliates greatly expanded their production facilities. The subsequent slowdown in economic activity in most developed countries, beginning in 1970, probably has resulted in significant underutilization of plant capacity. Signs of an upswing in economic activity abroad are becoming more evident, but current expenditure levels are probably expected to be sufficient to handle initial increases in demand. Evidently, plant and equipment expenditures abroad, as in the United States, tend to lag behind economic recovery.

A sharp cutback in spending by manufacturing affiliates in the United Kingdom this year is expected to be offset by healthy gains in Canada and Latin America. Next year, manufacturing affiliates in most areas plan to spend at about their 1972 levels.

As in manufacturing, spending estimates for affiliates in the mining industry appear to have been affected by overcapacity. Outlays are expected to fall 4 percent this year and to increase only slightly in 1973, following 2 years of extraordinary growth.

Led by the strong growth of trading affiliates, aggregate spending in industries other than mining, manufacturing, and petroleum is expected to rise substantially in both 1972 and 1973.

Affiliates in this group taken together account for about 10 percent of total expenditures for all industries.

Plant and equipment expenditures and U.S. direct investment abroad

Plant and equipment expenditures increase the asset base of U.S.-owned foreign investments, but they do not necessarily result in an increase in the value of U.S. direct investment abroad which is a measure of the U.S. claims on those assets.

The relationship between affiliates' plant and equipment expenditures and

U.S. direct investment largely reflects the source of financing. For instance, foreign affiliates may obtain funds for plant and equipment expenditures directly from their U.S. parent companies in the form of loan or equity capital. Such transfers of funds are recorded as direct investment capital outflows in the U.S. balance of payments and they increase the value of U.S. direct investment abroad. U.S. owners, to the extent of their equity participation, also have a claim on the earnings of their affiliates. Thus, the use of reinvested earnings to finance

Table 3.—Estimates of Plant and Equipment Expenditures by U.S. Corporations' Foreign Affiliates in the Petroleum and Mining and Smelting, and Other Industries (Except Manufacturing)—Summary of Surveys

(Millions of dollars)

By area and major industry division	Actual					Projection ¹	
	1967	1968	1969	1970*	1971	1972	1973
Petroleum							
All areas.....	3,001	3,311	3,438	2,797	4,728	5,190	5,278
Canada.....	636	669	699	736	748	828	848
Latin American Republics and other Western Hemisphere.....	306	346	381	614	638	576	579
Venezuela.....	163	173	239	313	295	173	161
Other Latin American Republics.....	149	164	136	183	284	304	199
Other Western Hemisphere.....	55	60	125	110	189	190	210
Europe.....	1,046	851	876	974	1,383	1,484	1,534
United Kingdom.....	289	283	248	286	334	376	406
European Economic Community.....	582	461	472	646	734	821	802
Belgium and Luxembourg.....	301	71	21	71	138	89	84
France.....	61	82	86	107	121	227	191
Germany.....	261	180	164	128	168	242	287
Italy.....	68	96	111	160	268	178	206
Netherlands.....	77	83	91	74	80	98	100
Other.....	174	167	108	172	264	284	320
Japan.....	146	267	199	238	379	366	531
Australia, New Zealand, and South Africa.....	96	153	211	165	147	191	283
Other Asia.....	363	567	566	410	324	295	236
Middle East.....	113	128	154	141	324	484	689
Other Asia and Pacific.....	125	158	261	364	444	439	449
International shipping.....	14	136	319	312	585	517	788
Mining and Smelting²							
All areas.....	630	1,036	1,132	1,337	1,735	1,857	1,467
Canada.....	447	469	369	411	696	645	688
Latin American Republics and other Western Hemisphere.....	268	496	497	477	244	234	262
Europe.....	8	10	19	15	16	18	15
European Economic Community.....	3	3	3	3	3	4	3
Other.....	5	7	7	12	13	14	12
Australia, New Zealand, and South Africa.....	247	198	265	382	642	647	579
Other areas.....	48	30	58	82	117	117	142
Other industries (except manufacturing)							
All areas.....	832	860	1,439	1,353	1,508	1,619	1,766
Canada.....	284	265	326	424	414	479	613
Latin American Republics and other Western Hemisphere.....	163	220	263	239	282	258	309
Europe.....	248	261	333	426	534	624	648
United Kingdom.....	46	43	82	80	118	169	119
European Economic Community.....	100	118	140	188	225	235	284
Other.....	96	90	112	158	191	227	236
Australia, New Zealand, and South Africa.....	43	33	43	78	82	88	99
Japan.....	6	9	11	8	17	21	3
Other areas.....	79	71	86	138	179	149	136

* Revised.

1. See note, table 1. 2. There are no expenditures in the United Kingdom and Japan.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

capital expenditures also results in an increase in the U.S. direct investment position abroad. The use of other sources of financing for plant and equipment expenditures, such as foreign equity participation, affiliate borrowing abroad, and affiliates' depreciation reserves, does not increase the U.S. investors claims on the foreign affiliate

and therefore does not increase the value of U.S. direct investment abroad. (The annual change in the direct investment position is equal to the sum of net capital outflows and the U.S. share of reinvested earnings, plus any valuation adjustments. See "U.S. Direct Investments Abroad in 1970" in the October 1971 SURVEY.)

Since foreign affiliates have a mix of funds available to them to finance their capital outlays, only a portion of their total plant and equipment expenditures is related directly to funds which affect the balance of payments or the direct investment position of the United States. The remainder of this article presents a brief analysis of that relationship.

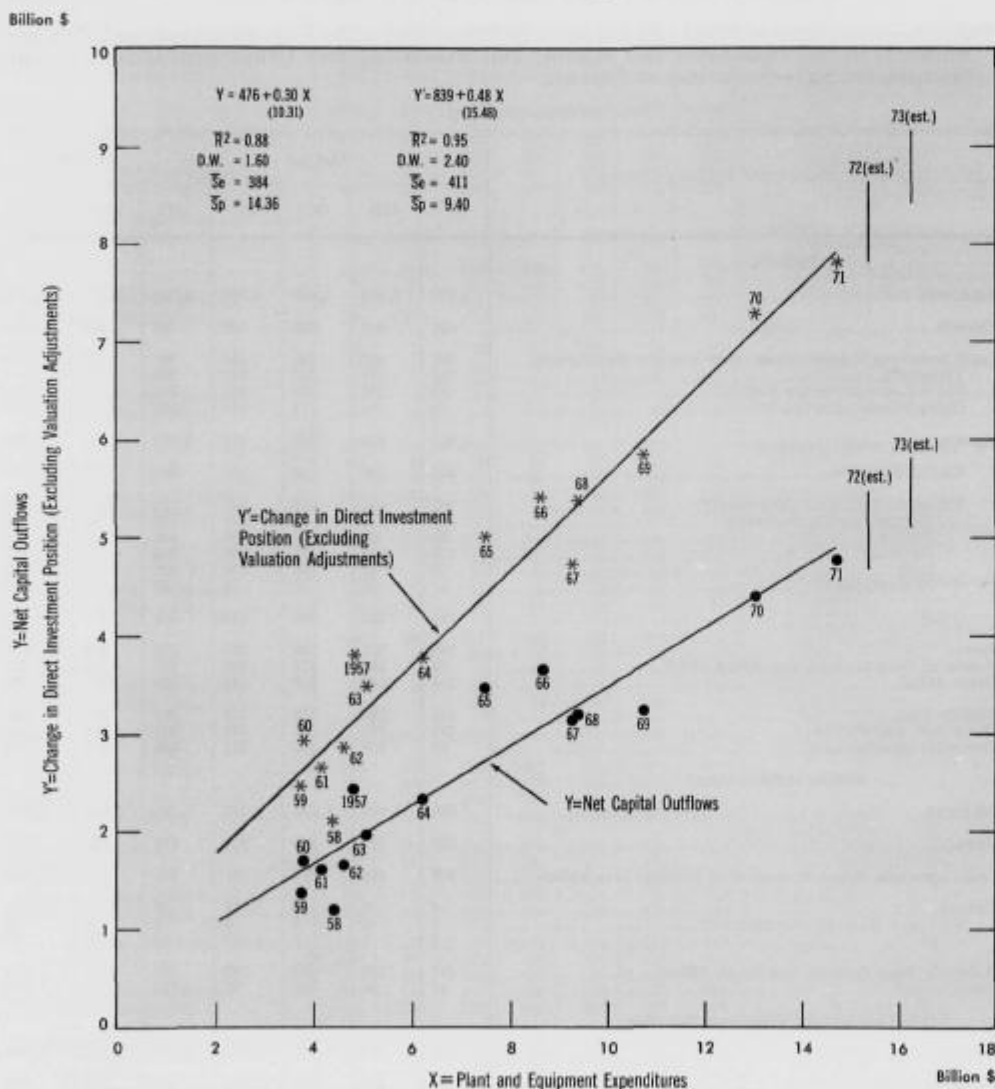
The results of simple regression analysis are shown in chart 11 for, first, the relationship between affiliates' plant and equipment expenditures and balance of payments net capital outflows for direct investment, and second, the relationship between plant and equipment expenditures and the change in the U.S. direct investment position excluding valuation adjustments (i.e., net capital outflows for direct investment plus the U.S. share of affiliates' reinvested earnings²). The points on the chart represent data for 1957, when the first plant and equipment spending survey was taken, through 1971. A simple regression line has been fitted to each of the two sets of points.

Of course, net capital outflows and the change in investment position are affected by many factors other than plant and equipment expenditures. Credit conditions and profit rates both here and abroad, for instance, influence the mix of available financing. Government policies, such as the U.S. direct investment control program discussed below, may also have an impact. However, in spite of these other influences, there is a surprisingly strong simple relationship between net capital outflows or changes in the direct investment position and plant and equipment expenditures.

The relationship between plant and equipment expenditures and net capital outflows indicates that annual net capital outflows averaged about one-third of annual plant and equipment expenditures in the years 1957 through 1971. The regression, with plant and equipment expenditures as the independent variable, indicates a high correlation ($\bar{R}^2=0.88$) between the two variables. The regression coefficient (t statistic=

CHART 11

Plant and Equipment Expenditures, Net Capital Outflows, and Change in Direct Investment Position (Excluding Valuation Adjustments)



NOTE—Figures in brackets are t ratios.

\bar{R}^2 = Coefficient of determination corrected for degrees of freedom.

D.W. = Durbin-Watson statistic.

\bar{S}_e = Corrected standard error of the estimate.

\bar{S}_p = Corrected standard error of the estimate divided by the mean of the dependent variable (in percent).

30.31) is significant and the Durbin-Watson statistic ($D.W.=1.60$) leads to the acceptance of the hypothesis that error terms are serially independent.

The relationship between plant and equipment expenditures and annual changes in the U.S. direct investment position excluding valuation adjustments indicates that, over the period covered, net capital outflows plus reinvested earnings were on average about one-half of total plant and equipment expenditures. As in the first equation, the regression coefficient is significant ($t=15.48$) and the Durbin-Watson statistic ($D.W.=2.40$) suggests the absence of serial correlation.

There were two periods of time in which the actual relationship between expenditures and capital outflows differed substantially from that estimated by the regression line. (The same differences also occurred in the relationship between expenditures and the change in the direct investment position.) First, in 1957 net capital outflows were much higher, and in the following year much lower, than the regression estimate. Foreign affiliates may well have used a portion of 1957 outflows to finance expenditures in 1958. In addition, 1957 was a year for which a benchmark survey of direct investment was taken and therefore the coverage of capital flows was probably better. In other than benchmark years, total capital flows are the sum of reported data for a somewhat smaller group of U.S. direct investors.

The second significant deviation occurred in 1965 and 1966. In both years, net capital outflows were substantially higher than the regression estimate. These were the second and

third years of a 3-year period of exceptionally rapid spending growth. The average annual increase in expenditures for the 3 years 1964-66 was about 20 percent. The high ratio of capital outflows to expenditures in 1965 and 1966 may have reflected an unusually large need for U.S. funds to finance this sustained rapid growth, since internally generated funds of the affiliates grow rather steadily over time and foreign financing may not have been available. In future work with these data, any systematic variation in these years due to the sustained high rate of growth must be taken into account.

The high ratio of direct investment capital outflows to expenditures in 1965 and 1966 occurred despite initiation of voluntary controls designed to improve the balance of payments. (A portion of the unusually large increase in such flows in the first half of 1965 may have been in anticipation of those controls.) The voluntary program regulating direct investment was made mandatory in 1968. The effect of these controls has been to encourage U.S. corporations or their affiliates to borrow funds abroad in order to reduce the impact of direct investment on the U.S. balance of payments. While these regulations do not necessarily restrain either net capital outflows or plant and equipment expenditures, they probably have resulted in structural changes affecting their relationship. If the regulations result in increased U.S. parent company borrowing abroad and these funds are used to finance affiliates' capital spending, then net capital outflows and the change in the direct investment position and their relationship to capital expenditures would be essentially the same as in the absence of controls. If,

on the other hand, the regulations result in increased affiliate borrowing abroad to finance plant and equipment expenditures, then net capital outflows and the change in investment position would be lower than they would be in the absence of controls and their relationship to plant and equipment expenditures would be changed. There is some evidence (although inconclusive) that the latter has happened. From 1957 through 1967, the last year prior to mandatory controls, total net capital outflows averaged 39 percent of plant and equipment expenditures. In 1968-71, the percentage was 33 percent.

The estimated relationships may be useful in giving an indication of what impact planned affiliate expenditures in 1972 and 1973 will have on balance of payments net capital outflows and on the U.S. direct investment position. Of course, it must be recognized that the relationships estimated by the regressions may not hold very closely in any given year. The lines on the right-hand side of chart 11 represent the range (to one standard error) of net capital outflows and of the change in the U.S. direct investment position associated with the current estimates of plant and equipment expenditures in 1972 and 1973. The range is about plus or minus \$385 million for net capital outflows and about plus or minus \$410 million for the change in the direct investment position. These relationships provide useful insight. However, to develop more precise predictive tools further research is needed to take into account the numerous factors other than plant and equipment expenditures which affect net capital outflows and the change in the direct investment position.